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| Fidonet HAM/PACKET Digest - For up to date HAM/PACKET info |
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|
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E D I T O R I A L S

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In this issue I have included the new FCC proposal for the new communicator class license. The FCC is requesting feedback from the ham community, for whatever good it will do.

I am once again including a survey form to be filled out and sent back to me. Please take just a couple of minutes and fill it out.

Also are the regular clips and pieces of informative mail that has been passed through the Fidonet Ham and Packet echomail areas.

73! de KB9BVN

I can now be reached via Usenet at brian@towers
or !nstar!towers!brian

or on GEnie at MURREY

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B U L L E T I N S

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Worldwide Packet Recap - K4NGC

World Wide Recap by Countries As of 02-01-1990 by K4NGC

The following is a computed recap of the World Wide WWPACKET.DBF file I maintain. It reflects the number and type of activities by country. If you have any changes to this file please address them to K4NGC @ K4NGC.

State	DIGI	PBBS	TOTAL	PERCENT
-----	----	----	-----	-----
Argentina	35	35	70	1.35%
Australia	39	70	109	2.11%
Austria	5	6	11	0.21%
Belgium	0	9	9	0.17%
Brazil	8	7	15	0.29%
Canada	33	133	166	3.21%
Chile	23	5	28	0.54%
Colombia	15	13	28	0.54%
Costa Rica	6	3	9	0.17%
Denmark	0	20	20	0.39%
Ecuador	0	3	3	0.06%
Finland	20	21	41	0.79%
France	9	41	50	0.97%
Germany, Federal Rep	63	30	93	1.80%
Greece	3	7	10	0.19%
Hong Kong	0	8	8	0.15%
Hungary	4	4	8	0.15%
Iceland	0	3	3	0.06%
India	1	1	2	0.04%
Indonesia	2	52	54	1.04%
Ireland	4	6	10	0.19%
Israel	0	6	6	0.12%
Italy	49	96	145	2.80%
Japan	6	177	183	3.54%
Korea, South	7	4	11	0.21%
Luxembourg	0	1	1	0.02%
Malaysia	0	2	2	0.04%
Mexico	16	23	39	0.75%
New Zealand	8	31	39	0.75%
Norway	52	26	78	1.51%
Paraguay	0	1	1	0.02%
Peru	7	3	10	0.19%
Phillipines	5	33	38	0.73%

Portugal	0	2	2	0.04%
Singapore	0	1	1	0.02%
South Africa	13	14	27	0.52%

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Spain	0	29	29	0.56%
Sweden	3	52	55	1.06%
Switzerland	0	12	12	0.23%
United Kingdom	2	180	182	3.52%
United States	1678	1800	3478	67.25%
Uruguay	2	2	4	0.08%
USSR	0	1	1	0.02%
Venezuela	7	5	12	0.23%
Yugoslavia	18	7	25	0.48%
	----	----	----	-----
Total	3023	2148	5171	100.00%

The WWPACKET.DBF files are available on my LandLine Bulletin Board to all who want it. My LandLine BBS telephone number is 703-680-5970. These files are in Text, ARC and Dbase formats.

Don Bennett (K4NGC)
 15016 Carlsbad Road
 Woodbridge, Va 22193
 (Home) 703-670-4773
 (LLBBS) 703-680-5970
 (Packet) K4NGC @ K4NGC

US Packet Recap - K4NGC

United States
Recap by State
As of 02-01-1990
by K4NGC

The following is a computed recap of the WWPACKET.DBF file I maintain for the United States. It reflects the number and type of activities by state. If you have any changes to this file please address them to K4NGC @ K4NGC.

State	PBBS	DIGI	TOTAL	PERCENT
-----	-----	-----	-----	-----
Alabama	32	42	74	2.13%
Alaska	9	20	29	0.83%
Arizona	40	24	64	1.84%
Arkansas	19	32	51	1.47%
California	181	146	327	9.40%
Colorado	44	69	113	3.25%
Connecticut	24	31	55	1.58%
Delaware	5	4	9	0.26%
Dist of Columbia	0	0	0	0.00%
Florida	105	94	199	5.72%
Georgia	38	28	66	1.90%
Guam	0	0	0	0.00%
Hawaii	11	10	21	0.60%
Idaho	7	7	14	0.40%
Illinois	48	68	116	3.33%

Indiana	59	66	125	3.59%
Iowa	25	19	44	1.26%
Kansas	25	37	62	1.78%
Kentucky	26	43	69	1.98%
Louisiana	20	4	24	0.69%
Maine	23	21	44	1.26%
Maryland	90	68	158	4.54%
Massachusetts	44	46	90	2.59%
Michigan	51	31	82	2.36%
Minnesota	18	25	43	1.24%
Mississippi	11	11	22	0.63%
Missouri	26	44	70	2.01%
Montana	17	21	38	1.09%
Nebraska	11	16	27	0.78%
Nevada	4	14	18	0.52%
New Hampshire	19	25	44	1.26%
New Jersey	79	50	129	3.71%
New Mexico	20	13	33	0.95%
New York	118	93	211	6.06%
North Carolina	27	33	60	1.72%
North Dakota	7	5	12	0.34%
Ohio	83	58	141	4.05%
Oklahoma	18	26	44	1.26%
Oregon	18	13	31	0.89%
Pennsylvania	73	49	122	3.51%
Puerto Rico	2	2	4	0.11%

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Rhode Island	6	3	9	0.26%
South Carolina	25	12	37	1.06%
South Dakota	6	7	13	0.37%
Tennessee	31	22	53	1.52%
Texas	68	32	100	2.87%
Utah	12	22	34	0.98%
Vermont	12	9	21	0.60%
Virginia	66	82	148	4.25%
Virgin Islands	0	0	0	0.00%
Washington	35	20	55	1.58%
West Virginia	12	14	26	0.75%
Wisconsin	35	28	63	1.81%
Wyoming	10	19	29	0.83%

Total	1800	1678	3479	100.00%

The WWPACKET.DBF files are available on my LandLine Bulletin

Board to all who want it. My Landline BBS telephone number is
703- 680-5970. These files are in text, ARC and dBase formats.

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SpaceNews - 02-05-90

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SpaceNews
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MONDAY FEBRUARY 5, 1990

SpaceNews originates at KD2BD in Wall Township, NJ, and is distributed weekly around the world on UseNet and Amateur Packet Radio. It is available for UNLIMITED distribution.

* UoSAT-OSCAR-14 NEWS *

The FORTH Diary software is in operation on UO-14, as programmers MS Hodgart and MLJ Meerman (G0/PA3BHF) ground-test new attitude-determination and control software prior to re-loading the OBC.

The standard UoSAT ASCII whole-orbit data (WOD) format has been added to the DIARY's downlink schedule, and new WOD surveys have been conducted daily. Stations with UoSAT-2 decoders and WOD collection software should be able to decode these surveys without difficulty. The surveys which have been transmitted in ASCII so far are a survey of the magnetometer channels (22, 23 and 24 starting at 21:54 on 26 January), and a survey of the PACSAT Communications Experiment 80C186 CPU temperature and current consumption (channels 5 and 44, starting 11:45 on 27 January). The very beginning of the PCE survey clearly shows the 10-degree increase in CPU temperature which occurs when the 80C186 is turned on.

* UoSAT-OSCAR-15 NEWS *

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Nothing has been heard from UO-15 since 22 January. Tracking stations and amateur listeners have determined that the object "out ahead" of the Microsat cluster is not UO-15, but the spent Ariane third stage. The object trailing the pack is SPOT-2, which has been raised to a slightly higher orbit and so has lower mean motion than the other satellites.

Accurate reports of UoSAT-OSCAR-15 reception after 2330 UTC on 22 January are desperately needed. The nominal downlink frequency is 435.120 MHz, and transmissions are at 1200 bits/second AFSK-FM.

[Story by G0/K8KA]

* MUSES-A LAUNCH *

=====

MUSES-A was launched on 24-Jan-90 at 20:46 JST (=UT+9h) from Kagoshima Space Center. The satellite was nicknamed as 'HITEN', which means guardians, living in heavens, of Buddah, after putting it into the planned orbit.

MUSES-A is a lunar satellite and will make the first lunar flyby on 19Mar90 at 05:30 JST, when it will come within 18,000 km of the lunar surface. Just before the flyby, a lunar orbiter will be deployed. A second lunar encounter is expected to occur on 10Jul90.

NASDA postponed the launch of MOS-1b until 07-Feb-90, due to a needed replacement of an electronic device used to control the launcher's second stage.

[From: Yoshiro Yamada of the Yokohama Science Center, Japan]

* SHUTTLE NEWS *

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Launch of Atlantis and the STS-36 mission is scheduled for later this month. A Terminal Countdown Demonstration Test was conducted with the STS-36 crew from 02Feb90 through 03Feb90 in preparation for the shuttle launch.

* FEEDBACK WELCOMED *

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Feedback regarding SpaceNews can be directed to the editor (John) via any of the following paths:

UUCP : ucbvax!rutgers!petsd!tsdiag!ka2qhd!kd2bd
PACKET : KD2BD @ NN2Z (Neptune, New Jersey)

ARRL DX Bulletin 02-02-90

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| Relayed from packet radio via                               |
| N8EMR's Ham BBS, 614-895-2553 (1200/2400/19.2 telebit,8N1) |
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ZCZC AE59
DX BULLETIN 5 ARLD005
FROM ARRL HEADQUARTERS
NEWINGTON CT FEBRUARY 2, 1990
TO ALL RADIO AMATEURS

THANKS TO PAUL, K1XM AND THE SOUTHERN NEW ENGLAND DX ASSOCIATION
FOR THE FOLLOWING DX INFORMATION.

FROM THE DXCC DESK. THE FOLLOWING OPERATIONS ARE NOW BEING
CREDITED FOR DXCC. LU6ELF/D2 FROM ANGOLA, AND XW8CW, XW8DX,
XW8KPL, AND XW8KPV FROM LAOS. ALSO, THE 5BDXCC IS NOW
ENDORSEABLE FOR 12 AND 17 METERS. APPLICATIONS WILL BE ACCEPTED
IMMEDIATELY. SEND AN SASE TO HQ FOR AN APPLICATION FORM.

THAILAND. FRED, K3ZO HAS BEEN ACTIVE FROM HS0B AND HS0E. HE IS
EXPECTED TO BE ACTIVE THROUGH FEBRUARY 15. MEANWHILE, JOHN,
K9EL IS EXPECTED TO OPERATE FROM HS0E FROM FEBRUARY 1 THROUGH 4.

EAST KIRIBATI. WAYNE, W9GW IS EXPECTED TO BE ACTIVE FOR A WEEK
STARTING FEBRUARY 14 AS T32BN.

VANUATU. A GERMAN GROUP IS EXPECTED TO ACTIVATE THIS ONE

BEGINNING FEBRUARY 3 FOR A MONTH. LOOK FOR THEM ON CW ABOUT 5 KHZ FROM THE BOTTOM OF THE BAND AND ON PHONE ON THE STANDARD FREQUENCIES.

ZONE 23. RV0YF HAS BEEN ACTIVE REGULARLY ON 80 AND 40 METER CW AROUND 1100 TO 1200Z.

CRETE. SV9AKI AND SV9AHZ ARE BOTH ACTIVE ON 20 METER SIDEBAND. LOOK FOR THEM AROUND 0600Z AND 2100 TO 2300Z.

IRAQ. YI1BGD HAS BEEN VERY ACTIVE AROUND 28540 TO 28580 KHZ FROM 1200 TO 1500Z. THEY HAVE ALSO BEEN WORKED ON 14233 KHZ AT 0600Z AND 3799 KHZ AT 0100Z.

FEDERATED STATES OF MICRONESIA. V63AO HAS BEEN VERY ACTIVE ON 28500 KHZ PLUS OR MINUS 25 KHZ AT 2100 TO 2200Z. AR

ARRL Bulletin 7 - No Code!

QST DE W1AW
ARRL Bulletin 7 ARLB007
From ARRL Headquarters
Newington CT February 8, 1990
To All Radio Amateurs

The FCC proposed to amend its rules in PR Docket 90 55 by establishing a codeless class of amateur operator license. The Communicator Class would be incorporated into a simplified licensing structure containing four ascending steps, Communicator, General, Advanced, and Amateur Extra classes. Current Technician and Novice Class operator licenses would be grandfathered indefinitely, with no new licenses issued. Existing licenses could be modified or renewed.

Privileges for the Communicator Class would include all emission types. The proposed transmitter power for the Communicator Class would be 200 watts PEP. Stations with Communicator Class

control operators would not be permitted to transmit on the 2 and 6 meter VHF bands and the HF bands.

The commission is requesting comments on all aspects of this proposal.

Copied from W1AW by Tad, KT7H @ N7HFZ.

ZCZC AP10
PROPAGATION FORECAST BULLETIN 6 ARLP006
FROM ARRL HEADQUARTERS
NEWINGTON CT FEBRUARY 5, 1990
TO ALL RADIO AMATEURS

WHETHER IT IS SIGNIFICANT OR NOT, THE DAILY SOLAR FLUX AS GIVEN BY WWV HAS BEEN MORE LIKE THE SAME DATA FOR LAST MONTH THAN WE HAVE SEEN IN SOME TIME. NOW THE SOLAR FLUX IS DOWN TO 160, ITS LOWEST FOR MONTHS. VISUAL OBSERVATION OF THE SUN YIELDED THE FEWEST NUMBER OF SPOTS IN A LONG TIME, BUT RADIO PROPAGATION WAS STILL GENERALLY GOOD. A SOLAR FLUX OF 160 IS NOT BAD, THOUGH IF THE DOWNSLIDE CONTINUES MUCH FARTHER THE USEFULNESS OF THE 10 METER BAND FOR DX MIGHT BRIEFLY SUFFER.

THE EASTERN HALF OF THE SUN WAS DEVOID OF SPOTS ON SUNDAY, BUT NEW ACTIVITY SHOULD BE SHOWING EARLY THIS WEEK. IF THIS HAPPENS IN A RUSH, WE MIGHT HAVE DEGRADED CONDITIONS ON PATHS TRAVERSING THE HIGHER LATITUDES. LOW LATITUDE AND TRANSEQUATORIAL CIRCUITS SHOULD NOT BE AFFECTED APPRECIATIVELY UNLESS THE INCREASE IS OF UNUSUAL PROPORTIONS.

IF THE RISE IS GRADUAL, PROPAGATION SHOULD BE GENERALLY GOOD FOR ALL LATITUDES AND THE MUF MAY RISE SUFFICIENTLY FOR THE 6 METER BAND TO BE OPEN FOR DX AGAIN.

AMERICAN SUNSPOT NUMBERS FOR JANUARY 25 THROUGH 31 WERE BETWEEN 144 AND 162 WITH A MEAN OF 155. AR

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A R T I C L E S

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Hams Fined for Malicious conduct

News Release - Federal Communications Commission, Field
Operations Bureau, Douglas Arizona, January 8, 1990

AMATEUR RADIO OPERATOR PAYS FINE FOR CAUSING MALICIOUS
INTERFERENCE TO OTHER AMATEURS; FCC ASSISTED BY ARRL

Mr. Donald R. Lehto WA7WOC of Carefree Arizona, has paid a \$750 fine for willfully and maliciously interfering with amateur communications. On May 22, 1989, investigators from the FCC office in Douglas, AZ monitored deliberate interference to two other amateur radio operators in Carefree. The interfering signals, on 3992 and 3983 kHz, were traced to Mr. Lehto's home using mobile direction finding equipment. Since the FCC had previously sent Mr. Lehto a written warning of the penalties for malicious interference, a fine was immediately issued.

This ended an investigation which involved close cooperation between the FCC and the volunteer monitoring organization of the amateur radio auxiliary, the American Radio Relay League, (ARRL).

Both the ARRL and the FCC had received numerous complaints about an amateur who followed other amateur operators from one frequency to another and jammed various networks and amateur repeaters. Complainants reported that this individual made belching sounds, used certain characteristic obscene expressions and transmitted dead carriers.

Prior to the FCC investigations, members of the ARRL volunteer monitoring group monitored several instances of suspected deliberate interference which matched the above description. Using mobile direction-finding equipment, the volunteers traced the interfering signals to Mr. Lehto's home.

Prototype 905 MHz Digital Radio Update 2-6-90

By Glenn Elmore N6GN, copied from rec.ham.radio

The first prototype 905 MHz "user" digital radio has been completed. The intent of the prototype phase was to arrive at a reproducible design using readily available components which could provide good performance at low to moderate cost. These radios are intended to provide moderate speed, 250 kbps-500 kbps user access to an amateur radio network.

The prototype radio consists of four boards, PA, LO, RX and TX mounted on a U shaped chassis. This modularity was done to facilitate design but the pilot run design will be more integrated. Present effort is in laying out two PC boards, one for the PA and another containing the entire low power radio, power and control circuits. It appears to all fit in a 5 by 7 inch enclosure on which the top is entirely heatsink. Interface to the radio is differential ECL; TXD, RXD, RTS and DCD plus S meter output, antenna connector and 12 VDC @ .3A on receive and under 4A on transmit.

An attempt was made to produce local oscillator signals of good signal purity and stability. This was thought to be important since similar radios will probably be used, in the near term anyway, at backbone IP switch sites and will need to operate in congested RF environments. There has also been some thought given to full duplex operation of this hardware but such operation isn't being considered at this time. Dual outputs of +10 dBm at approximately 96 MHz and 764 MHz are provided for transmitter and receiver mixing. Both output frequencies are derived from a single crystal oscillator. Spurious signals are below -80 dBC.

Transmitter output power is in excess of +41 dBm (12 watts) with modulation related sidebands down at least 70 dB (at 250 kbaud, modulation index = 1.4) at the edges of a 2 MHz wide, 905 MHz centered channel and out of band spurious performance also over 70 dB down (this excludes second harmonic which is approximately -60 dBC). Suppression of adjacent channel interference is achieved by control of deviation and an active filter ahead of the VCO tuning input. The VCO is presently free running at 45 MHz and doubly upconverted to 905 MHz. This provides 905 MHz output frequency stability and accuracy essentially the same as that of the 45 MHz VCO alone. This performance seems acceptable but alternative plans are being considered for providing complete crystal derived frequency accuracy along with fast transmit startup and .5 Mbaud sorts of modulation should this be necessary. The present architecture has the advantage of being easily adaptable to transverter operation by slight change of crystal frequency and substitution of a multimode HF transceiver for the 45 MHz VCO and receiver demodulator circuits.

The receiver has good BER down to at least -90 dBm or so. Turn around time is even better than expected. Since adding a little

design effort to the switching circuits it is now possible to square wave modulate the RTS (ptt) line at rates of several kilohertz and generate a clean RF square wave at full power. In between these square wave 12 watt output pulses the receiver is able to demodulate a -90 dBm signal applied to the same antenna connector (30 dB power attenuator inserted to protect the signal generator). The receiver is fully alive less than 40 microseconds after the falling edge of RTS. It is truly a "packet radar" and calculations show that with a 8' TVRO dish antenna or similar, the radio should be able to copy its own packets reflecting from a 747 aircraft at 4 to 10 miles distance. Pressed into normal use the radio should easily be back on receive before the previously transmitted packet has reached a distant node.

The first pilot run is expected to be of 12 radios and will no doubt reveal some areas where change can improve performance and reduce cost. Some thought is being given to a "one-board" lower power radio which might even plug into a PC slot. Such a radio might use phaselock of an on-channel FSKed VCO instead of the dual conversion approach to reduce cost.

PC board design is presently in progress for the pilot run radios. It is anticipated that these first radios will initially be used for backbone/switch radios as well as for user access radios as a part of the prototype northern California moderate speed IP network now being constructed. Plans have not yet solidified for construction of additional radios but it is expected that the next design effort will be aimed at providing similar radios for the digital allocations at 1249, 1251 and 1298 MHz.

de N6GN

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Gateway - Vol 6 No. 10

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| Relayed from packet radio via                               |
| N8EMR's Ham BBS, 614-895-2553 (1200/2400/19.2 telebit,8N1) |
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GATEWAY: The ARRL Packet-Radio Newsletter - - Page 1 of 4
Volume 6 - Number 10 - February 2, 1990

Published by the: American Radio Relay League
225 Main Street, Newington, CT 06111

Stan Horzepa, WA1LOU, Editor

4TH ANNUAL SOUTHWEST OHIO DIGITAL SYMPOSIUM HELD

The Fourth Annual Southwest Ohio Digital Symposium was held on Saturday, January 20 under the co-sponsorship of the Engineering Technology Department of the Middletown (Ohio) Campus of Miami University, the Middletown DIAL Radio Club, the Ohio Packet Council and the Cincinnati Buckeye Netters.

There were 114 registrants and another 30 to 40 who attended but did not register. The crowd was broken into two groups - beginners and advanced. It appears that the two were equally attended and equally appreciated.

The "Packet for Beginners" session was moderated by Carl Morgan, K8NHE, and the following talks were presented:

"Introduction to Packet" by K8NHE

"What's After 'MYCALL: NC8Q cmd:'" by Chuck Gelm, NC8Q

"Networking for Beginners" by Phil Frazier, KA8TEF

"Basics of DX Packet Clusters" by Jay Slough, K4ZLE

"Build Your Own Computer?" by Bill Nielsen, WB4APC

"An FM Radio Designed for Digital Communications" by Phil Anderson, W0XI

"Emergency Packet Radio" by Tony Dacres, W8MDK

The "Advanced Topics" were moderated by Hank Greeb, N8XX, and included the following discussions:

"State of the Art on 446.5 MHz" by Phil Frazier, KA8TEF, and Vic Kean, K1LT

"What's with 221.11 MHz OHIONET?" by Hank Greeb, N8XX

"TexNet/GLNET" by Jay Nugent, WB8TKL

"The Kantronics DE-56" by Karl Medcalf, WK5M

"G8BPQ PC>NODE" by Karl Medcalf, WK5M

"Update on Cellular Networking in Chicago" by Don Lemke, WB9MJN

"Emergency Packet Radio" by Tony Dacres, W8MDK

"Terminal Control Protocol/Internet Protocol (TCP/IP)" by Gary Sanders, N8EMR

"An FM Radio Designed for Digital Communications" by Phil Anderson, W0XI

"Pushing K9NK Modems and PacComm Gear to 19.2 Kb" by Phil Frazier, KA8TEF

"Linking DX-Packet Clusters" by Jay Slough, K4ZLE

"MSYS and APLink" by Steve Wolf, N08M

There were demonstrations of 4800-bit/s and 2400-bit/s packet radio, the new Kantronics DVR-2-2 radio, a "show and tell" about TexNet including working hardware. Terminal emulators included several PC/XTs and related devices (one of them home-brewed by WB4APC), a couple of Macintoshes, a simple video terminal and a Commodore with DIGICOM>64. Software, such as the G8BPQ code, MSYS and a variety of others, were on display, as was the HAZMAT file. Several folks brought maps of packet-radio networks of Ohio and the surrounding states. W8MDK had an extensive display of emergency uses of packet radio.

Three interesting bits of information:

1. Kantronics is in production with the DVR-2-2
2. 56-kbit/s cellular is running on a test basis in Chicago over a 30-mile path
3. Michigan seems to be moving heavily toward TexNet/GLNET, with its 9600-bit/s backbone and 1200-bit/s user access

The best news was that a whole bunch of hams sat down with diverse views and varying levels of knowledge about packet radio and calmly and rationally discussed the state of affairs of the

221.11-MHz OHIONET, and the 446.5-MHz MIDNET. No grand solutions to networking for Ohio were proposed (except for solicited plugs for TexNet by WB8TKL and for cellular networking by the contingent from Chicago). It is hoped that this spirit of cooperation continues and grows.

The organizers of the symposium wish to thank Phil Anderson, W0XI, and Karl Medcalf, WK5M, of Kantronics for their very professional presentations in duplicate and triplicate and

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special thanks to Carl Morgan, K8NHE, and Miami University for the use of their facilities.

from Hank Greeb, N8XX

SIX HAM SATELLITES LAUNCHED SUCCESSFULLY

On January 22 at 01:35:31 UTC, the European Space Agency (ESA) successfully launched its V35 mission, an Ariane 4 booster, from its launch facility in Kourou, French Guiana. On board were six Amateur Radio satellites, two built by the University of Surrey, UO-14 and UO-15, and four MicroSats built by AMSAT-NA, AO-16, AO-17, AO-18 and AO-19. ("UO" is the acronym for UoSAT-OSCAR and "AO" for "AMSAT-OSCAR".)

An errant tape recorder on the primary payload, SPOT-2, delayed the launch from January 9 and bad weather in the area caused a scrub of the launch on January 21. However, a picture perfect launch occurred at the beginning of the ten minute launch window on Sunday evening local time.

The AMSAT Launch Information Network Service (ALINS) brought the launch "live" to thousand of amateurs and interested on-lookers worldwide. Doug Loughmiller, K05I, President of AMSAT-NA, anchored the net which could be heard on the ham bands covering 160 meters all the way up to Amateur Radio satellites AO-10 and AO-13. Also heard on the ALINS net were a number of the major contributors to this latest effort. Commentary prior to the launch was offered by Tom Clark, W3IWI; Jan King, W3GEY; Martin Sweeting, G3YJ0; Jeff Ward, G0//K8KA; Harold Price, NK6K; Dave Cowdin, WD0/HHU; and Bob McGwier, N4HY. It was noted that this was also an anniversary for the ALINS net. Twenty years ago, the first ALINS net covered the launch of Australis-OSCAR-5.

K05I, watching the ESA video feed of the launch, counted down to ignition and lift-off. WD0/HHU, who had been at the launch site for over five weeks, gave updates on the progress of the mission from his position at ESA mission control. At approximately three minutes into powered flight (during the second stage burn), the launch commentary ceased. For over a minute, neither WD0/HHU or W3IWI, who was monitoring the launch from the NASA Goddard Space Flight Center in Greenbelt, Maryland, offered any information. This silence certainly activated the adrenaline and stopped the breathing of those who were listening. One voice offered some comfort by explaining that ESA had never had a second stage failure in any of its missions. Finally, WD0/HHU's voice came through indicating that all systems were "still go." With that message, those listening could begin breathing again. As part of the elation felt by the development team, NK6K (a member of the software team) indicated his delight in recognizing that the satellites were no longer within the grasp of the hardware team and that the satellites were now "all theirs."

At 20:04 minutes of the mission elapsed time, ESA issued a

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payload separation command to its launch vehicle and U0-14 and U0-15 were freed. A minute and a half later, at 21:29 mission elapsed time, ESA issued two additional payload separation commands and A0-16, A0-17, A0-18 and A0-19 were released. WD0/HHU reported that the six separation lights were "all green" indicating confirmation that all six Amateur Radio satellites had successfully separated from the launch vehicle. He also reported that AMSAT was treated in a most professional manner by ESA. Although the primary payload, SPOT-2, (a \$100-million observation satellite) was ESA's primary concern, applause from ESA mission control could be heard over the ALINS net as the six satellites were separated from the main launch vehicle.

During the first orbit, AMSAT-LU in Buenos Aires commanded the CW beacon to begin transmitting and it provided vital temperature and battery voltage information to the satellite command team. Although attempts by N4HY to turn on the PSK telemetry beacons during orbit 1 were unsuccessful, all of the MicroSats were transmitting by the end of the last pass (orbit 3) over the west coast at approximately 0700. Spacecraft engineers NK6K and W3GEY, operating from W6TRW, indicated that the satellites had either responded to ground command or had

switched on their transmitters automatically in order to prevent battery overcharging. WEBERSAT was successfully commanded on from Weber State College in Ogden, Utah during orbit 2. UO-14 and 15 were activated during the first pass (orbit 5) that was visible from the University of Surrey in the UK.

from AMSAT News Service

LISTENING TO THE UoSATS

On January 22, UO-14 and UO-15 were both successfully commanded on by the UoSAT control station in Guildford. On the 0900 UTC pass, the 435.120-MHz transmitter on UO-15 was enabled and the satellite started transmitting engineering telemetry. UO-14 was first commanded on the 1030-UTC pass. Its downlink is on 435.070 MHz. Further telemetry was received on the 1200-UTC pass. The downlinks are running at 50% duty cycle, currently 1 minute on and 1 minute off; this may be changed to 10 minutes on 10 minutes off during a later pass.

During the first days of operation, the two satellites will transmit several different data formats. These will all be asynchronous bytes sent at 1200 bit/s using AFSK FM modulation. The data can be demodulated by any UoSAT-1/2 decoder connected to a 435-MHz FM receiver. Unlike UoSAT-2, which uses ASCII characters for most of its data formats, much of the demodulated data from the new satellites will be binary and not printable ASCII. This data will be coming from one of two on-board sources: the dedicated hardware telemetry system, or the 1802 on-board computer operating system (known as the DIARY).

The dedicated hardware telemetry system is built around a custom-designed VLSI manufactured especially for the UO-14 and

UO-15 satellites. This telemetry system is independent of all on-board computers and provides UoSAT engineers with a simple way to monitor the health of the satellite. Telemetry is transmitted by the VLSI system in 10-byte "packets," each beginning with the bytes FF FF (hexadecimal).

The VLSI system should only be in use for a few orbits, so we will not publish the packet format at this time; if it is used for longer than expected, more detailed information will be distributed.

The DIARY, the FORTH operating system, will allow us to begin more complex operations, such as whole-orbit-data collections, initial attitude determination and deployment of the gravity-gradient boom. The FORTH DIARY will put out printable ASCII data (including a news bulletin) along with binary data formats.

Anyone who can get a binary logs of data from UO-14 or UO-15 on IBM disks is encouraged to send them to the UoSAT Team, The University of Surrey, Guildford, Surrey, GU2 5XH, United Kingdom.

from Jeff Ward, G0/K8KA

LISTENING TO THE MICROSATS

Three of the MICROSATs, PACSAT, LUSAT and WEBERSAT, are transmitting 1200-bit/s PSK packet-radio telemetry in the 437-MHz range. LUSAT is also transmitting CW on 437.125 MHz. The fourth MICROSAT, DOVE, has a 2-meter downlink on 145.825, which later will be transmitting synthesized voice, but is now sending ordinary 1200-bit/s AFSK FM packet-radio telemetry which anyone can copy with a "stock" TNC and 2-meter FM radio. No special equipment is required!

On one pass, W3IWI was able to hear DOVE well on his HT with a rubber duckie when it was 2800 km away at approximately 5 degrees above the horizon. On the radio he normally uses for the W3IWI PBBS, DOVE is as loud as many local area packet-radio users. DOVE's 2-watt 2-meter transmitter puts out a potent signal!

All six spacecraft are in essentially the same sun synchronous orbit. In the northern hemisphere, you will get two or three evening passes in a window centered on 10 PM local time and two or three morning passes centered on 11 AM local time. All of the passes you can hear will be between plus and minus two hours from these times. Therefore, if you want to copy the packet-radio signals from DOVE flying at 800 km, just tune your 2-meter FM receiver to 145.825 MHz and leave your TNC in the monitor mode. It will transmit for a couple of minutes and then stop for 30 seconds. (To decode the telemetry from any of these satellites, watch the ALL@AMSAT packet-radio bulletins distributed by AMSAT for more details.)

And there's more to come! The Japanese plan to launch OSCAR-20 this month, and astronaut Ron Parise, WA4SIR, will have packet-radio hardware on-board the next flight of the shuttle Columbia (STS-35) in April. (If you are proud of these Amateur Radio achievements, please contact AMSAT for more information on how you can participate in these Amateur Radio space activities. AMSAT's address is PO Box 27, Washington, DC 20044.)

from Tom Clark, W3IWI

UO-15 SILENT

Nothing has been heard from UO-15 since January 22. Keplerian elements from Royal Greenwich Observatory show that the MICROSATs and UoSATs are in a small group, but one object is some five minutes ahead of the others. The UoSAT team is attempting to learn more from other radar sites.

Any accurate reports of UO-15 reception after 2330 UTC on January 22 are solicited. The nominal downlink frequency is 435.120 MHz and transmissions are at 1200-bit/s AFSK FM.

from Jeff Ward, G0/K8KA

NEW ROSE X.25 PACKET SWITCH VERSION IS AVAILABLE

The latest version of the ROSE X.25 Packet Switch (v900104) is now available. New features in this new release include the following:

- o Reliable Mode for machine forwarding (aka BBS),
- o Call Progress messages to let users know when the connection is complete,
- o Application to provide text reason with *** Disconnect/*** Reset messages,
- o Support for AEA PK87/88 and PacComm TNC-320 (VHF/HF),
- o EPROM defaults now configurable in EPROM,
- o Info Text can now be loaded into LOADER,
- o A new application called HEARD to collect heard lists,

- o Enhanced FRACK handling (needed for HF usage),
- o Bug fixes for some cases when "Memory Used" creeps up.

The new ROSE code may be downloaded from the following landline systems:

PacComm BBS at 813-874-3078 (1200 baud; file area #1),

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W2XQ BBS at 609-859-1910 (1200/2400 baud; packet-radio files area),

WA6RDH BBS at 916-678-1535 (1200/2400 baud),

RATS UNIX BBS at 201-387-8898 (1200 baud; login as "rats" and the follow menu).

The ROSE code file name is "RZSW0104.ZIP" and its documentation's file name is "RSWD0104.ZIP." (Both are archived using PKZIP v1.01.)

from Tom Moulton, W2VY@KD6TH.NJ.USA

PACKET-RADIO NEWSLETTERS WANTED

Your Gateway editor is collecting newsletters from packet-radio groups around the world in order to build a reference library that can be used to trace the development of amateur packet radio. Although, I already have quite a few newsletters (thanks to TAPR President Andy Freeborn, N0/CCZ, who kindly sent me his collection), there still are a lot of holes that need filling. So, if you have packet-radio newsletters that you would like to donate to this cause, please let me know what you have (via packet radio or otherwise) and I will let you know if I need them. By the way, I don't need any old Gateways as I have the complete run.

GATEWAY CONTRIBUTIONS

Submissions for publication in Gateway are welcome. You may submit material via the US mail to:

Gateway

Stan Horzempa, WA1LOU
75 Kreger Drive
Wolcott, CT 06716-2702

or electronically, via CompuServe to user ID 70645,247 or via Internet to 70645.247@compuserve.com. Via telephone, your editor can be reached on evenings and weekends at 203-879-1348 and he can switch a modem on line to receive text at 300, 1200 or 2400 bit/s. (Personal messages may be sent to your Gateway editor via packet radio to WA1LOU @ N1DCS or IP address 44.88.0.14.)

The deadline for each issue of Gateway is the Saturday preceding the issue date (which is typically a Friday).

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No Code License Proposal

FCC PROPOSES NEW CODELESS CLASS OF AMATEUR OPERATOR LICENSE

(PR DOCKET 90-55)

The Commission is proposing to amend its rules by establishing a codeless class of amateur operator license to be called the Communicator Class. The Communicator Class would be incorporated into a simplified licensing structure containing four ascending steps: 1) Communicator 2) General, 3) Advanced, and 4) Amateur Extra Classes. Current Technician and Novice Class operator licenses would be grandfathered indefinitely, with no new licenses issued for those license classes but existing licenses could be modified or renewed.

The codeless operator class license would satisfy three major objectives. The first objective is to offer an entry level license for all persons who find telegraphy a barrier to pursuing the purpose of the amateur service. The second objective is to design a codeless license that can easily be implemented into the current licensing process. The third objective is to avoid any negative effect upon current

licensees, the volunteer examiners who administer amateur examinations, or the Commission's workload.

The amateur service exists for the purpose of self-training, inter-communication and investigations to be carried out by duly authorized persons interested in radio technique solely with a personal aim, and without financial gain.

Individuals seeking a license to operate an amateur station must prove that they can send correctly by hand and receive correctly by ear, text in Morse code signals. Although this requirement may be waived for an operator of an amateur station transmitting only on frequencies above 30 MHz, each of the five classes of operator licenses issued by the Commission requires the applicant to pass an examination in the international Morse code.

The Communicator Class operator license would not require knowledge of Morse code telegraphy messages. Privileges for the Communicator Class would include all emission types. The Communicator Class license would replace two existing beginner operator classes and would simplify the amateur operator license structure.

The Commission would require applicants for the Communicator Class license to pass a 60 question written examination. The new question pool would be comprised of the questions from the two pools currently used in the Novice and Technician license examinations as well as the addition of new questions.

The proposed transmitter power for the Communicator Class would be 200 watts peak envelope power and the licensee's station

would be eligible for a Group D call sign. Stations with Communicator Class control operators would not be permitted to transmit on the 2 and 6 meter VHF bands and the HF bands. The Commission is requesting comments on the effect of excluding Communicator Class licensees from the two VHF bands. Comments are also requested on the desirability of including the opportunity for Communicator Class licensees to experience on-the-air telegraphy operation on the HF bands. Additionally, a Communicator Class licensee who passes or receives credit for a telegraphy examination would be authorized the privileges of the Technician Class.

The Commission is requesting comments on all aspects of this proposal.

Action by the Commission February 8, 1990, by Notice of Proposed Rulemaking (FCC 90-55).